July 2014

Energy News

Washington State Energy Office

Energy News Overview

Nationally, the EPA held the first series of public hearings this week on its proposed Clean Power Plan (also referred to as the CPP or the 111d rule). The closest hearing was in Denver, where EPA representatives took questions from interested parties. Outside the hearing the scene was much more colorful as those in favor and opposed to the rule conducted dueling loud protests: article on page 5. Legal challenges to the CPP are being developed and will be filed before the final proposed rule emerges in June 2015. To drum up support for the rule, the White House has been highlighting the overall financial benefits of the CPP: see article on page 5.

The Federal Commerce Department announced preliminary findings in the trade case against Chinese solar PV manufacturers and levied tariffs ranging from 23 to 59 percent on their products.

Internationally, the EU and US enacted additional sanctions on Russia, following the Malaysian airline shoot down, and further Russian involvement in the rebellion in eastern Ukraine. Some of the sanctions will impact the Russian oil and gas industry and their multinational energy business partners, which are developing a number of projects in Russia. If the energy projects fail to go ahead, the multinationals will not only be financially impacted, but their already slipping oil and gas production numbers will decline further, which could result in modestly lower global oil and natural gas production, and put upward price pressure on prices for crude oil and natural gas.

In local news, at the 4th Carbon emission Reduction Taskforce meeting, the members evaluated market approaches to reduce greenhouse gas emissions. Three mechanisms were evaluated: Cap and Trade, a Carbon Tax, and a hybrid system. See related article on page 5, which includes a link to the Governor's website.

Three Washington utilities this week received the first awards from the state's new Clean Energy Fund to help pay for field-testing battery storage technologies and integration software. Puget Sound Energy, Avista, and Snohomish County PUD were awarded a total of $14 million in matching grants from the state's new$40-million fund.

A fast moving series of fires in north-central Washington, called the Carlton Complex, that started July 14, heavily damaged the town of Pateros and destroyed 300 homes in Okanogan County. The fire inflicted unprecedented damage on Okanogan County PUD's transmission and distribution system, and caused power outages for more than 7,000 customers of the PUD and a local electric cooperative. Most power was restored to coop customers on Friday and to PUD customers on Saturday.

Inside this issue:

What's Happening in the Energy Office

State Building Codes Change for Rooftop Solar

The Washington State Building Code Council unanimously approved a change in state law that allows installation of simple rooftop solar photovoltaic (PV) systems without review by an engineer. This change removes an estimated $500 to $2,500 in project costs and up to eight weeks of wait time for homeowners without compromising structural safety, according to Tim Stearns, Senior Energy Policy Specialist at the State Energy Office in the Department of Commerce.

"The Building Code Council demonstrated leadership and their willingness to address complicated and challenging issues in order to help Washington homeowners capture the economic and environmental benefits of solar," Stearns said.

Some jurisdictions already permitted installation of rooftop solar without engineering, but this brings consistency statewide. The move supports work of Northwest Solar Communities, a coalition of jurisdictions, utilities, industry partners and citizen groups working together to make rooftop solar electricity more cost effective for all.

The state building code change was approved using the Emergency Rulemaking process, making it effective on July 1, 2014. It will still have to complete the normal rulemaking process which includes public hearings this fall, a Council vote to make it a permanent rule in November and going through next year's legislative session. The full text of the emergency rule and checklist templates that jurisdictions can use in implementing the rule can be found at the Northwest Solar Communities website and the WSU Energy Program website.

"We appreciate the willingness of the Washington Association of Building Officials, especially Tom Phillips from the City of Kirkland, State Building Code Council member Jeff Petersen of MN Custom Homes in Bellevue, Mia Devine of Northwest SEED, and the solar industry for their support and technical assistance as they worked with us to move this forward," said Gary Nordeen of the Washington State University Energy Program. "The building code staff has been valuable in their assistance in bringing parties together to learn from each other, coming up with workable solutions," added Nordeen.

Meeting with Utilities on Proposed EPA 111d Rule

The State of Washington is reviewing the recently issued proposed EPA 111d rule related to greenhouse gas emissions from existing power plants. We are asking utilities to attend an electric utility meeting on **Tuesday, August 12th from 1:30 to 4 pm at the WA Department of Commerce's office in Olympia**.

A state team of representatives from the Departments of Ecology and Commerce, and the Utilities and Transportation Commission will be facilitating. As the state's environmental agency, the Department of Ecology is responsible for submitting our comments on the draft rule by October. As part of the process of developing those comments, we would like to hear from those organizations that have an interest in the rule. We are organizing additional meetings with both the business community, and environmental and public interest groups.

At the meeting we will provide a brief overview of our analysis of the rule and its implications for Washington, but mainly want to use this as an opportunity for utilities to provide their perspectives to us. Please RSVP to Carolee Sharp at carolee.sharp@commerce.wa.gov. In the RSVP, let us know if you plan to provide any comments so that we can make sure to provide sufficient time for everyone to be heard.

Electricity, Petroleum & Natural Gas Prices

Energy Price Overview

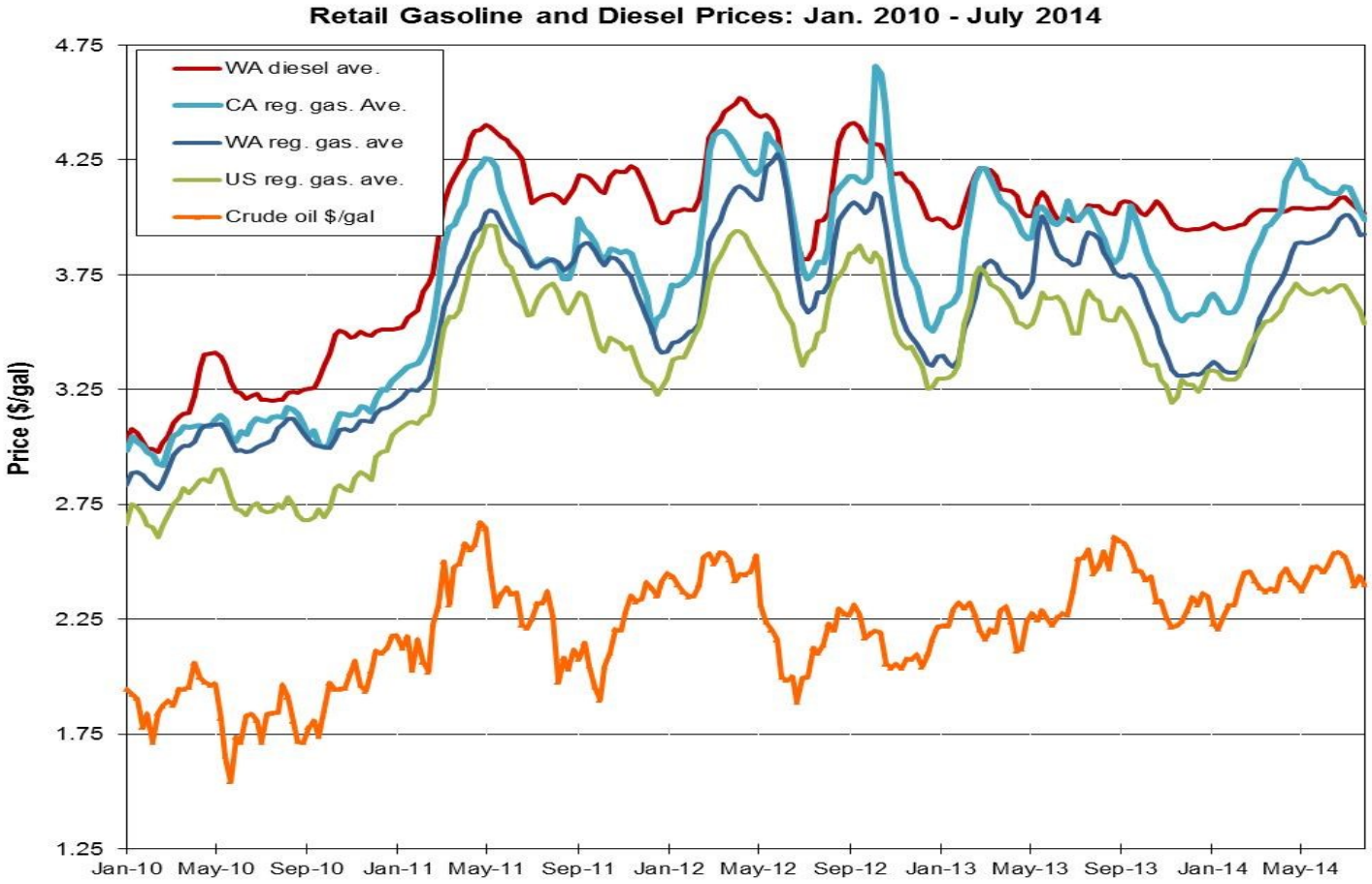
During May and June political instability in Libya, Iraq and Ukraine caused a small run-up in the West Texas Intermediate oil price. During July market concerns diminished and WTI shed about $7 dollar/barrel, sliding under $100/barrel during the last week of the month. Brent crude oil price has declined a similar amount during July, but maintains a $7 premium to WTI.

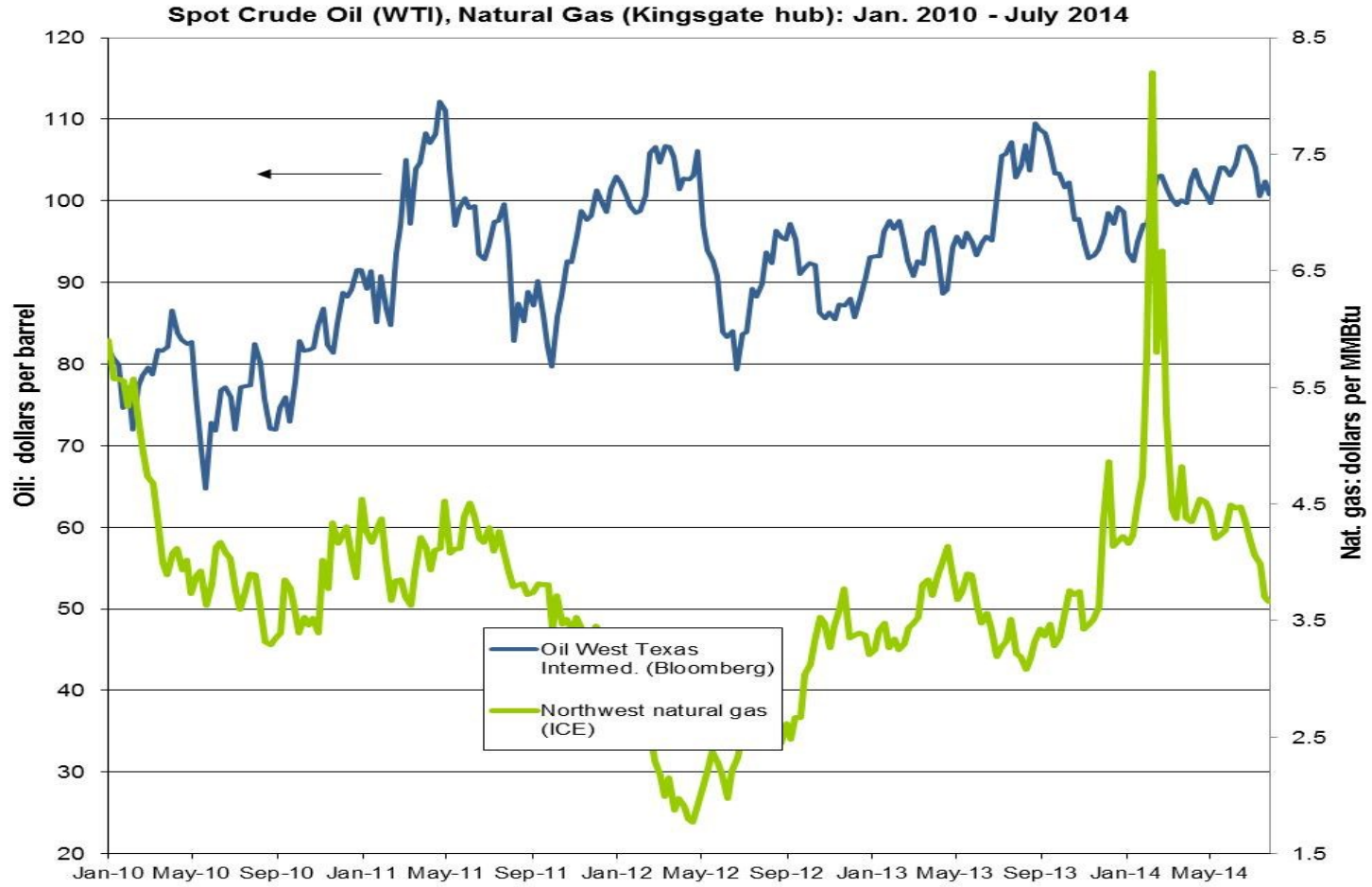
Retail prices for gasoline at the national peaked during the last week of June, about four weeks later than a typical year. During the last full week in July U.S. gasoline and diesel prices averaged $3.54 and $3.86/gallon respectively. In Washington state gasoline and diesel prices peaked about a week later in early July and for the last week in July averaged $3.93 and $4.02/gallon, an eight cent and six cent decrease from the last week in June. Diesel prices have been relatively stable for the last year and a half, while gasoline prices have shown typical or greater volatility. Analysts speculate that this is due to a rebalancing of fuel markets with several new large refineries coming on line in the Mideast and Asia. These new refineries are designed to produce mostly diesel type fuels and relatively little gasoline.

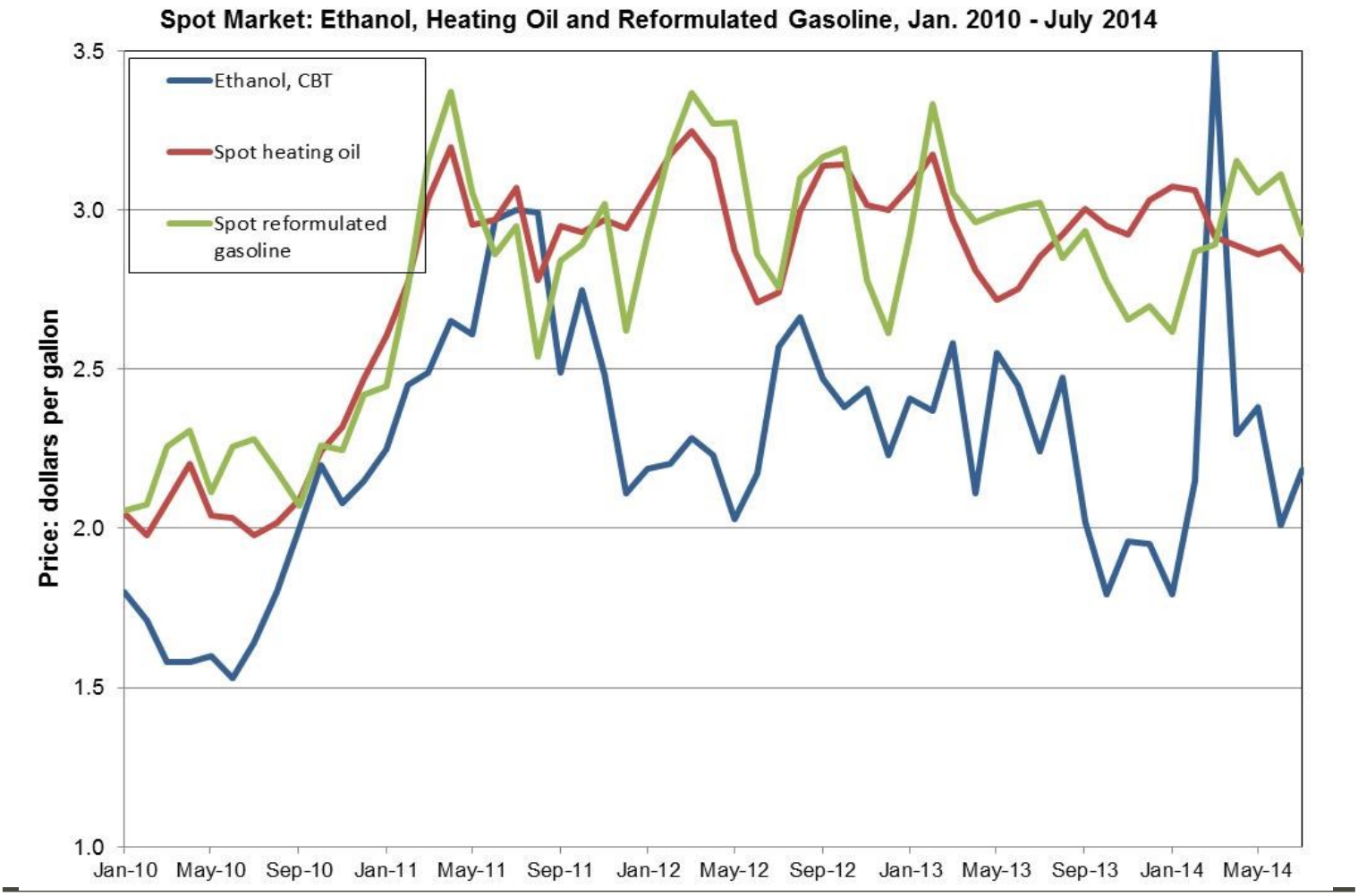
The price for month ahead NYMEX natural gas declined by 10 percent to $4.04/MMBtu during July. Spot prices have been running around $3.60/MMBtu down 15 percent form end of June. Locally, the natural gas month-ahead future contract for Sumas this past week averaged $3.74/MMBtu. The EIA reported that for 10 weeks natural gas storage injections have been running well a head of the 5-year averages and is now "only" 22 percent below its 5-year average; in the West we are 16 percent below our 5 year average. In April national gas storage was 50 percent below the 5 year average for that month.

Electricity spot prices at the Mid C increased about $5/megawatt-hr relative to June, averaging $39.8/megawatt-hr during July. Spot market prices have risen as persistent warm weather has been observed in the Northwest. Hydropower generation has been plentiful during June and July and exports to California are above normal.

Energy Price Summary	**Current**	**Month Ago**	**Year Ago**
Monthly Range at Mid-C (Peak: $ per MWh)	29.4-72	25.8-43	28-44
Average Mid C price (Peak hours $ MWh)	39.8	35.0	45.8
Electricity WA Retail: May (cents/kWh)	7.27	7.17	7.06
Natural gas Kingsgate spot price (next day: $ per million BTU)	3.68	4.37	3.22
Natural gas Sumas futures price (next month $ per million BTU)	3.74	4.27	3.43
Natural gas Sumas monthly average: May ($ per million BTU))	4.45	4.41	3.91
Natural gas H.H. futures (NYMEX next month: $ per million BTU)	4.04	4.49	3.44
E85 (national average: $ per gallon gasoline)	3.76	3.87	3.82
Ethanol (CBT next month contract: $ per gallon)	2.19	2.01	2.24
Corn (CBT next month contract: $ per bushel)	3.71	4.40	4.89
Petroleum, West Texas Intermediate futures ($ per barrel)	100.9	106.8	102.9
Seattle gasoline price ($ per gallon)	3.98	4.06	3.95
Gasoline futures (NYMEX next month: $ per gallon)	2.92	3.12	3.01
State diesel price ($ per gallon)	4.02	4.09	4.05
Heating oil futures (NYMEX next month: $ per gallon)	2.89	3.04	3.03
U.S. residential propane price report (reported Oct.-Mar.)	NA	NA	NA
Clean Cities: Alternative Fuel Price Report, Apr. 2013	**US Avg current**	**West Coast current qtr**	**West Coast last qtr avg**
Ethanol E85 ($ per gas gallon equiv.)	4.81	5.09	4.55
Biodiesel B20 ($ per diesel gallon equiv.)	4.09	4.20	4.15
Biodiesel B99-100 ($ per diesel gallon equiv.)	4.65	4.95	4.99
Compressed Natural Gas ($ per gas gallon equiv.)	2.15	2.36	2.33
Propane ($ per gas gallon equiv.)	4.57	4.64	4.50


Retail Gasoline and Diesel Prices: Jan. 2010 - July 2014
WA diesel ave.
CA reg. gas. Ave.
WA reg. gas. ave
US reg. gas. ave.
Crude oil $/gal
Price ($/gal)
4.75
4.25
3.75
3.25
2.75
2.25
1.75
1.25
Jan-10 May-10 Sep-10 Jan-11 May-11 Sep-11 Jan-12 May-12 Sep-12 Jan-13 May-13 Sep-13 Jan-14 May-14


Spot Crude Oil (WTI), Natural Gas (Kingsgate hub): Jan. 2010 - July 2014
Oil: dollars per barrel
Nat. gas: dollars per MMBtu
120
110
100
90
80
70
60
50
40
30
20
8.5
7.5
6.5
5.5
4.5
3.5
2.5
1.5
Oil West Texas Intermed. (Bloomberg)
Northwest natural gas (ICE)
Jan-10 May-10 Sep-10 Jan-11 May-11 Sep-11 Jan-12 May-12 Sep-12 Jan-13 May-13 Sep-13 Jan-14 May-14



Energy Headlines - If you only have time to read a few articles—read these.

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http://www.nytimes.com/2014/07/31/business/energy-environment/energy-companies-rethinking-russia-after-new-sanctions.html?ref=energy-environment

The Carbon Dividend. New York Times, July 29.
http://www.nytimes.com/2014/07/30/opinion/a-plan-to-auction-pollution-permits.html?

White House Pushes Financial Case for Carbon Rule. New York Times, July 29.
http://www.nytimes.com/2014/07/30/us/politics/white-house-report-presses-economic-case-for-carbon-rule.html

Washington State Governor Inslee to Lay Out Ideas for Cap-And-Trade, Carbon Tax. Crosscut Seattle.
http://crosscut.com/2014/07/28/washington-governor/121225/inslee-set-lay-out-ideas-climate-change-cap-and-tr/

Solar Panel Prices Expected to Rise in the U-S Due to New Tariffs on Chinese Panels. Renewable Energy World.
http://www.renewableenergyworld.com/rea/news/article/2014/07/solar-panel-prices-expected-to-rise-in-the-us-due-to-new-tariffs-on-chinese-panels?cmpid=rss

China's Energy Plans Will Worsen Climate Change, Greenpeace says. New York Times, July 23.
http://www.nytimes.com/2014/07/24/world/asia/greenpeace-says-chinas-energy-plans-exacerbate-climate-change.html?

Denver Protests over proposed EPA power plant rules. Denver Post, July 29.
http://www.denverpost.com/news/ci_26238611/denver-protests-over-proposed-epa-power-plant-rules

Energy Headlines—continued

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White House Pushes Financial Case for Carbon Rule. New York Times, July 29.
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White House Unveils Climate Change Initiatives. New York Times.
http://www.nytimes.com/2014/07/17/us/politics/white-house-unveils-climate-change-initiatives.html?partner=rss&emc=rss

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http://www.cbc.ca/news/technology/global-heat-record-broken-for-june-following-record-may-1.2713463?cmp=rss

Corralling Carbon Before It Belches from the Stack. New York Times.
http://www.nytimes.com/2014/07/22/science/corralling-carbon-before-it-belches-from-stack.html?partner=rss&emc=rss&_r=0

Burning Wood for Power Can Be Low Carbon, UK Government Finds. The Guardian.
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http://blog.seattlepi.com/seattlepolitics/2014/07/10/a-big-controversial-columbia-river-oil-terminal-the-governor-will-decide/

Oil-By-Rail Fight in Washington Threatens California Gasoline Prices. Reuters.
http://www.reuters.com/article/2014/07/21/us-crude-railway-tesoro-idUSKBN0FQ0F720140721

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Should We Build New Nuclear Reactors in Washington State? Crosscut Seattle.
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http://www.bizjournals.com/portland/blog/sbo/2014/07/one-little-thing-that-will-save-northwest.html

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http://grist.org/news/washington-state-just-lopped-up-to-2500-off-the-cost-of-solar-panels-heres-how/?utm_source=syndication&utm_medium=rss&utm_campaign=feed

Electric cars

While You're Asleep, Electric Car Owners Are Guzzling Power. Mashable.
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Most Americans Support Carbon Tax When Revenue Is Earmarked. U-S News & World Report
http://www.usnews.com/news/articles/2014/07/21/most-americans-support-carbon-tax-when-revenue-is-earmarked

Forget the Death Spiral: Electric Vehicles Offer a Major Growth Opportunity for Utilities. GreenTech Grid
http://www.greentechmedia.com/articles/read/Electric-Vehicles-Offer-a-Major-Growth-Opportunity-for-Utilities

Misc.

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http://news.yahoo.com/wests-largest-coal-fired-plant-track-close-183936120.html

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Tesoro Savage Petroleum Terminal submission to the Energy Facility Siting Evaluation Council
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Redrawing the Energy-Climate Map. International Energy Agency, June 2013.
http://www.iea.org/media/freepublications/executivesummary/WEO2013_Climate_Excerpt_ES_WEB.pdf

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River & Snow Pack Info

- Observed June stream flow at The Dalles: 102% of average.
- Observed June precipitation above The Dalles: 76% of average.
- Forecast runoff at The Dalles, June: 107.7 million acre-feet, 105% of 30-year average
- Forecast snowpack volume: May, 117% of average.
- Federal hydropower generation in June. : 11,184 aMW, 2009-2013 average: 11,982 aMW.
- Reservoir content (Libby, Hungry Horse, Grand Coulee, Dworshak): June 92%, 5-year average: 90%.

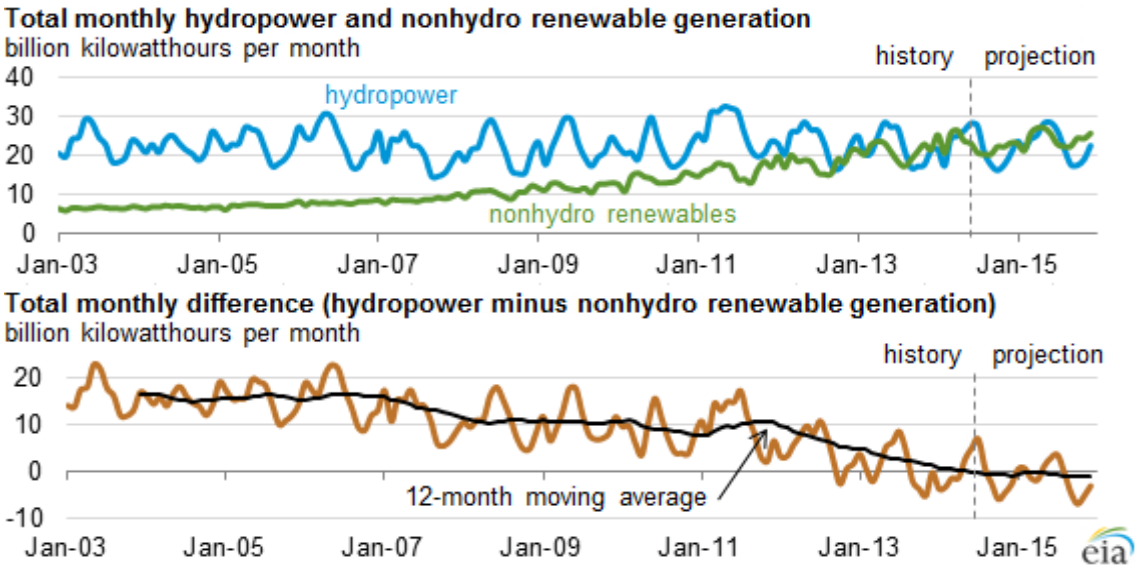
River Flow

Average flow at Lower Snake and Columbia dams

Data for 7/30/2014	Daily Outflow (kcfs)	Avg. for last 10 years (kcfs)
Lower Granite	34.1	35.8
The Dalles	157.5	164.3

Source: EIA, Energy Today.

April marked the eighth consecutive month that total monthly non-hydro renewable generation exceeded hydropower generation. Only a decade ago, hydropower—the historically dominant source of renewable generation—accounted for three times as much generation in the United States as non-hydro renewable sources (wind, solar, biomass, geothermal, landfill gas, and municipal solid waste).



The recent growth in wind and solar, which reflects policies such as state renewable portfolio standards and federal tax credits as well as declining costs of technology, has been the primary driver in the increasing market share of non-hydro renewable generation. There also has been growth in geothermal and biomass sources.

October 2012 was the first month on record in which non-hydro renewable generation exceeded hydropower generation. Although this reversal was short-lived because of the significant month-to-month variation in both hydro and non-hydro resources, the trend lines began to cross each other more frequently in the past year, with the most recent reversal lasting from September 2013 through April 2014. While hydropower once again exceeded non-hydro renewable generation in May 2014 (the latest available data), EIA projects that 2014 will be the first year in which annual non-hydro renewable generation surpasses annual hydropower generation. By 2040, non-hydro renewables are projected to provide more than twice as much generation as hydropower in EIA's *Annual Energy Outlook 2014* (AEO2014) Reference case, as discussed in the AEO2014 Market Trends. In other AEO cases that assume the continuation of tax credits or other policies that support non-hydro renewables, their overall generation and generation share relative to hydropower is much higher.

The dataset used to develop this article includes only generation from plants whose capacity exceeds 1 megawatt, and as a result does not include generation from most distributed solar PV capacity. Inclusion of distributed solar PV generation, which EIA estimates at roughly 10 billion kilowatt hours in 2013, modestly accelerates the timing of the crossover between hydro and non-hydro renewable generation (see AEO2014).

Hydropower capacity has increased by slightly more than 1% over the past decade, although actual hydropower generation can vary noticeably by season depending on water supply conditions. Wind capacity, on the other hand, has increased nearly tenfold over that same period. Although wind often has lower capacity factors than hydropower, wind generation increased from 3% to more than 30% of total renewable generation between 2003 and 2013. Hydropower does exceed non-hydro renewable generation in several states, particularly in the Northwest, where in 2013 conventional hydropower accounted for 69% and 56% of total electricity generation in Washington and Oregon, respectively. However, the market penetration of other renewables is growing in the United States, particularly in the Midwest and California.

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